MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2016 / 2017

PBC0016–BASIC COMPUTING AND PROGRAMMING

(Foundation in Engineering)

7 OCTOBER 2016
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **FIVE** printed pages with **FOUR** questions.
2. Answer **ALL** questions.
3. Write your answers in the Answer Booklet.

QUESTION 1

(a) In your own words, define the term 'computer'. Name **THREE** (3) areas of computer applications.

[5 marks]

(b) Describe the following computer categories:
(i) Supercomputer
(ii) Server
(iii) Workstation

[2 + 2 + 2 marks]

(c) Explain **THREE** (3) reasons why home and business users choose cloud computing.

[6 marks]

(d) Distinguish between two common types of RAM: static RAM and dynamic RAM.

[4 marks]

(e) List **FOUR** (4) factors that would affect the quality of a computer display.

[4 marks]

QUESTION 2

(a) Arrange these storage media according to their access time, from the fastest to the slowest: Optical Disc, Hard Disk, Tape, RAM and USB Flash Drive. What are the usual items that would be stored in the RAM and Hard Disk?

[6 marks]

(b) Suggest a suitable operating system for the following cases:
(i) A desktop operating system that is open-source and will work best for power users in terms of its flexibility and capabilities.
(ii) A desktop operating system that is also suitable to work with web applications.

[2 + 2 marks]

(c) Describe the differences between 'browser' and 'search engine'. Give an example of each.

[6 marks]

(d) Compute the amount of storage needed (in GB) to store a 2-hour video if 10 seconds of video is approximately 2 MB.

[4 marks]

(e) List **FIVE** (5) components that you can find in a system unit.

[5 marks]

Continued ....

Question 3

(a) What is the advantage of using a broadband Internet service? Describe **TWO** (2) broadband Internet service technologies for home and small business users.

[6 marks]

(b) Describe **THREE** (3) basic network topologies: Star, Bus, and Ring.

[6 marks]

(c) Suggest a suitable network communications standard/protocol for the following cases:

(i) You would like to transfer data between a computer and a mobile phone, which does not require for a line-of-sight transmission.

(ii) You would like to transfer large files such as videos through a door, and with a high transfer rate.

[4 marks]

(d) Define the term, multimedia. List **THREE** (3) areas of multimedia applications.

[5 marks]

(e) Distinguish between streaming and non-streaming audio. Name **TWO** (2) non-streaming audio format.

[4 marks]

QUESTION 4

(a) Determine whether the following variable names are valid in the C Programming language and state the reason if they are invalid.

(i) Integer
(ii) 1nteger
(iii) int
(iv) Int
(v) _int
(vi) %int

[6 marks]

(b) Write the following expressions in C statements.

(i) Declare a floating point variable `a` and assign it a value of 1.539 upon declaration.

(ii) Print the statement "`a is 1.54`", where 1.54 is the value stored in the floating point variable `a` declared above, rounded to 2 decimal places.

(iii) Read the user's input to the float variable `a`. This new value input by the user overwrites any previously stored value in `a`.

[2 + 2 + 2 marks]

Continued ....

(c) Predict the outcome of the following program:

```
#include <stdio.h>

int main()
{
    int i, max=6;
    for (i=0;i<max;i++)
    {
        printf("%d\t",i);
        printf("%d\t",i-10);
        printf("%d\t",i+10);
        if (i==max/2) printf("INTERLUDE!");
        printf("\n");
    }
    printf("Program Ended.\n");
    return 0;
}
```

[5 marks]

(d) Complete the following program in Figure 4(d)1 by filling in blanks indicated by numbers (i) to (vii). The program is written so that it prompts a user to select between printing odd or even numbers, then asking them for a number between 1 to 10. After receiving all the inputs, the program prints out all the odd/even numbers (depending on what the user chose) between 1 and the number the user entered (inclusive). Two sample outputs are as attached in Figure 4(d)2 and Figure 4(d)3.

```
//include the necessary header
i)_________________

int main()
{
int i,num;
char choice;

printf("Do you want to print odd or even? (o for
odd, e for even):");

//scan user input into character variable choice
ii)_______________

printf("Enter a number from 1 to 10:");

//scan user input into integer variable num
iii)_______________
```

```
//let counter i run from 1 up to and including num
iv)_________________
{
     //check if variable choice holds the value 'o'
     v)____________
          {
               //check if the value of i is odd
               vi)________
               printf("Odd:%d\n",i);
          }
       else
          {
               //check if the value of i is even
               vii)_______
               printf("Even:%d\n",i);
          }
}

return 0;
}
```

Figure 4(d)1

```
Do you want to print odd or even? (o for odd, e for even):o
Enter a number from 1 to 10:8
Odd:1
Odd:3
Odd:5
Odd:7
```

Figure 4(d)2

```
Do you want to print odd or even? (o for odd, e for even):e
Enter a number from 1 to 10:8
Even:2
Even:4
Even:6
Even:8
```

Figure 4(d)3

[8 marks]

End of Paper